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# Notice of Allowability

Application No.

09/595,036

Applicant(s)

RAKEL ET AL.

Examiner

Fred Ferris

Art Unit

2128

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 27 May 2004.
2. ☒ The allowed claim(s) is/are 1-19.
3. ☒ The drawings filed on 15 June 2000 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

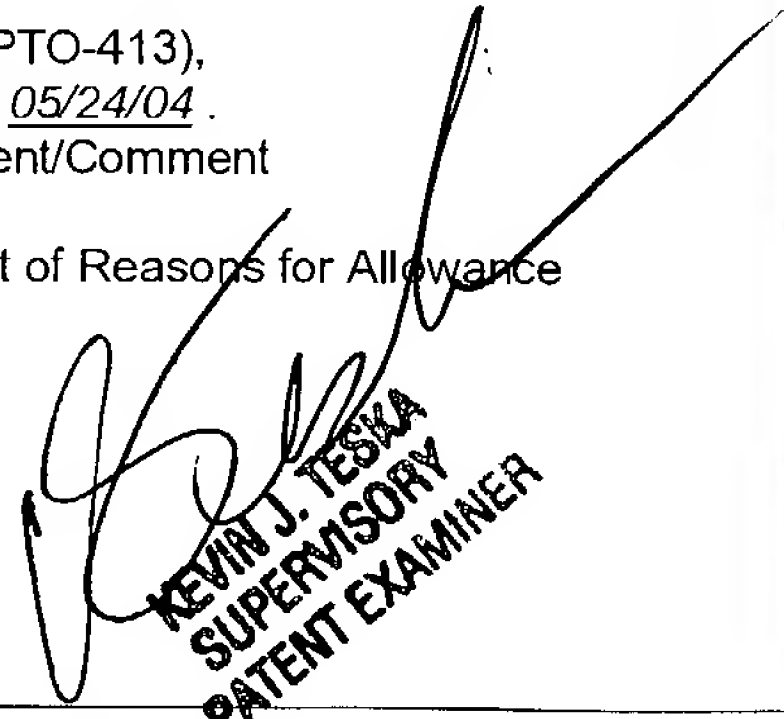
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

- |   |  |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)                                  |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date <u>05/24/04</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment   |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance                         |
|   | 9. <input type="checkbox"/> Other _____  |

  
KEVIN J. TESKA  
SUPERVISORY  
PATENT EXAMINER

### **DETAILED ACTION**

1. *This Office Action is responsive to applicant's amendment filed 27 May 2004. Applicants have cancelled claim 20. Claims 1-19 are now pending in this application. Claims 1-19 have now been allowed over the prior art of record.*

### **Response to Arguments**

2. *Applicant's arguments filed 27 May 2004 have been fully considered and found to be persuasive.*

Regarding applicant's response to 112(1) rejections: Applicant's have amended independent claims to include limitations relating to determining the worst case pull-up/down path by analytically accumulating a weighted resistance along a signal paths, empirically determining circuit element (topology) configuration, and threshold voltage drop between elements (see amended claims 1, 8, and 15) as indicated during telephone interview between applicant's representative and the examiner on 24 May 2004. (See Interview Summary) Accordingly, the examiner withdraws the 112(1) rejections (enablement and written description) in view of applicant's amendment to the claims.

Regarding applicant's response to prior art (102/103) rejections: Applicant's have amended independent claims to distinguish the claimed invention over the prior art of record as noted above. Accordingly, the examiner withdraws the 102(b) rejections (Mattos and MicroSim) and the 103(a) rejections (PSpice in view of Chang) in view of the amendment to the claims.

**Allowable Subject Matter**

3. *Claims 1-19 have been allowed over the prior art of record.*

*The following is an examiner's statement of reasons for allowance:*

*Applicants are disclosing a method using circuit simulation for determining the DC margin (one and zero margin) of a simulated latch circuit and associated path elements using worst case DC analysis of the pull-up/pull-down signal path to determine a weighted (accumulated) resistance for elements along a particular signal path. These features are disclosed in the prior art of record. However, the prior art of record, while disclosing these features does not meet the conditions as suggested in MPEP section 2132, namely:*

*"The identical invention must be shown in as complete detail as is contained in the ... claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an **ipsissimis verbis** test, i.e., identity of terminology is not required. **In re Bond**, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990)."*

*In this case, the prior art of record does not disclose the specific sequence of steps relating to determining the worst case pull-up/down path by analytically accumulating a weighted resistance along a signal paths, empirically determining circuit element (topology) configuration, occurrence of threshold voltage drop between drive and pass elements, and sequentially performing a first (trip voltage/latch portion), second (one margin/driver portion), and third (zero margin/pass path) simulation as now recited in independent claims 1, 8, and 15 and disclosed in applicant's specification*

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*page 6, line to page 9, line 16, in the context of the claims. Claims 2-7, 9-14, and 16-19 are allowable as being dependent from independent claims 1, 8, and 15 respectively.*

*(Also see interview summary dated 24 May 2004)*

*The closest prior art uncovered during examination discloses elements of the claimed invention as follows:*

*U.S. patent 6,292,766 issued to Mattos et al: discloses DC analysis of circuit path elements, simulated circuit element parameters, threshold (trip) voltages, pull-up path analysis, pull-down path analysis, threshold voltages between circuit elements, and pull-up/pull-down path signal levels.*

*MicroSim PSpice A/D Reference Manual: Discloses simulating/analyzing circuit designs, DC analysis of circuit path elements, threshold between element input/output voltage, and pull-up/pull-down path signal levels.*

*Fast generation of statistically-based worst-case modeling of on-chip interconnect, N. Chang et al: discloses weighting in analyzing the signal paths and weighting of both resistance and capacitance and worst-case analysis of elements in a circuit path.*

*Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."*

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### **Conclusion**

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred Ferris whose telephone number is 703-305-9670 and whose normal working hours are 8:30am to 5:00pm Monday to Friday.

Any inquiry of a general nature relating to the status of this application should be directed to the group receptionist whose telephone number is 703-305-3900.

The Official Fax Numbers are:

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July 28, 2004



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